

REMARKS

Pending Claims 1-21 and 33-40 stand rejected under the judicially created doctrine of obviousness-type double patenting. In particular, the Office Action states that the pending claims are not patentably distinct from Claims 1-19 of commonly assigned U.S. Patent No. 6,635,921 ("the '921 patent"). For the reasons discussed below, Applicants respectfully submit that pending Claims 1-21 and 33-40 are not obvious variations of the inventions recited in Claims 1-19 of the '921 patent and that, as such, the pending rejections should be withdrawn.

I. The Obvious-Type Double Patenting Rejections Should Be Withdrawn

An obviousness-type double patenting rejection may be appropriate where a claim in a pending application is merely an obvious variation of an invention claimed in a prior patent. M.P.E.P. § 804. In order to sustain an obviousness-type double patenting rejection, it must be shown that a person of skill in the art would conclude that the invention defined in the claim at issue is an obvious variation of an invention defined in one of the claims of the previous patent. M.P.E.P. § 804. When considering whether the invention defined in the pending claim is an obvious variation of one of the claims of the prior patent, the disclosure of the prior patent may not be used as prior art. M.P.E.P. § 804. For the reasons discussed herein, Applicants respectfully submit that the Office Action does not establish that any of the pending claims are obvious variations of one or more claims of the '921 patent.

Pending Claim 1 stands rejected as an obvious variant of Claim 1 of the '921 patent. In particular, the Office Action states that Claim 1 of the '921 patent "describes the elements of a planar transistor and a vertical transistor on a planar transistor" and that "a series of planar transistors, as in pending Claim 1, would have been obvious because memory cells are laid out in lines." While memory cells may be laid out in lines, this is not what is recited in pending Claim 1. Instead, pending Claim 1 is directed to a unit memory cell that comprises, among other things, a first planar transistor, a vertical transistor, and "a second planar transistor . . . in series with the first planar transistor." Applicants respectfully submit that

providing a row (or column) of memory cells is very different from providing two transistors in series, let alone providing two such transistors in a series arrangement within a single unit cell. In any event, to sustain the present rejection, it must be shown that one of skill in the art would have found it desirable – based on some other teaching, suggestion or knowledge in the prior art – to modify the invention of Claim 1 of the '921 patent to arrive at the precise invention of pending Claim 1. Applicants respectfully submit that such a showing has not been made.

Applicants further note that the Claim 1 of the '921 patent includes recitations that are not included in the present claims such as, for example, the multiple tunnel junction layer pattern recited in Claim 1 of the '921 patent. To sustain the pending double patenting rejections, it is also necessary to show that it would have been obvious to modify the invention of Claim 1 of the '921 patent to remove those elements. No such showing has been made in support of the present rejections. This provides an independent basis for withdrawal of the rejection of pending Claim 1, and applies equally well to the remaining of the rejected claims (and hence this basis will not be repeated in the discussion that follows below).

Pending Claim 13 likewise stands rejected over Claim 1 of the '921 patent as "describ[ing] exactly the same structural features." Applicants note, however, that pending Claim 13 recites multiple structural features that are not present in Claim 1 of the '921 patent such as, for example, the recitation that the storage node is "solely on a first portion of the channel region" and the recitation that the word line is on (among other things) a second portion of the channel region. Applicants respectfully submit that nothing in Claim 1 of the '921 patent suggests providing the storage node solely on a first portion of the channel region or providing the word line on a second portion of the channel region that the storage node is not on. Moreover, the Office Action does not point to any evidence showing that a person of skill in the art would have found it obvious to make such changes to the invention recited in Claim 1 of the '921 patent. Accordingly, for each of the above-recited reasons, Applicants respectfully submit that the obviousness-type double patenting rejection of Claim 13 should also be withdrawn.

Pending Claim 33 appears to be rejected as an obvious variant of Claim 4 of the '921 patent. In particular, the Office Action states that forming the storage node "only on a first portion of the channel region" is disclosed in Claim 4 of the '921 patent, as shown in Fig. 3A of the '921 patent. As an initial matter, Applicants note that this rejection is improper in that the specification of the '921 patent is not prior art to pending Claim 33 (see discussion above), and hence can, at most, be used to interpret the claims of the '921 patent, and not as the basis for an obviousness-type double patenting rejection. Moreover, Claim 4 of the '921 patent does not disclose or suggest multiple recitations of pending Claim 13, including, among other things, the recitations that (1) the storage node is "only on a first portion of the channel region" and (2) "a second planar transistor . . . that is on a second portion of the channel region." Applicants respectfully submit that the Office Action neither identifies where these structural recitations are found in Claim 4 of the '921 patent nor cites to evidence showing that such structural features would be obvious variants of the invention of Claim 4. Accordingly, the rejection of Claim 33 should likewise be withdrawn.

Pending Claim 38 likewise stands rejected as an obvious variant of Claim 4 of the '921 patent. In support of this rejection, the Office Action cites to Fig. 3A of the '921 patent. As noted above, such incorporation of Fig. 3A is improper in that Fig. 3A is not prior art to the present application and hence cannot be used to argue that pending Claim 38 is an obvious variant of Claim 4 of the '921 patent. In any event, Applicants respectfully submit that the recitation of pending Claim 38 that the gate "is laterally offset from at least one of the source region and the drain region" is not taught by, or an obvious variation of, the invention of Claim 4 of the '921 patent. In fact, nothing in Claim 4 of the '921 patent suggests in any way laterally offsetting a gate from one or both of the source and drain regions, nor does the Office Action cite to anything else in the prior art that would indicate that such a change would be an obvious variation of the invention of Claim 4. Applicants also respectfully submit that the Office Action is incorrect in indicating that Fig. 3A of the '921 patent discloses a gate layer that does not extend across the entire underlying channel. Instead, Applicants understanding is that the storage node 60a of Fig. 3A comprises the gate. Layers

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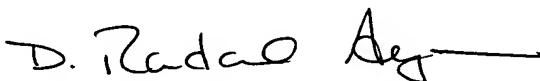
55a and 59a of storage node 60a are shown to extend from source region 79s to drain region 79d. Accordingly, this provides yet another reason for withdrawing the rejection of Claim 38.

Applicants note that the pending dependent claims also all stand rejected based on obviousness-type double patenting rejections. However, the Office Action fails to provide any basis for finding that each of the dependent claims are taught or suggested by claims of the '921 patent. For this reason alone, the rejections of the dependent claims should be withdrawn. Additionally, each of the rejections of the pending dependent claims should be withdrawn for at least the reasons that the rejections of their corresponding independent claim should be withdrawn, as set forth in the present Request for Reconsideration.

II. Conclusion

For the reasons discussed above, Applicants respectfully submit that the present application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,



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